

## METHOD AND APPARATUS FOR RESOURCE ACCESS SYNCHRONIZATION

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### ABSTRACT OF THE DISCLOSURE

Apparatus and methods of synchronizing resource access for a multi-threaded computing environment are disclosed. The mechanism is operable to manage a  
10 sequence of one or more mutexes, wherein the sequence of mutexes is associated with a resource and each mutex may be allocated to one thread. The mechanism is operable, when a requesting thread attempts an access to the resource, to lock a mutex, wherein the locked mutex is  
15 allocated to the requesting thread and to attempt to lock a previous mutex in the sequence if present. The requesting thread is suspended if the previous mutex is already locked until the previous mutex is unlocked in response to a previous thread finishing access to the  
20 resource. When attempting to lock a previous mutex in the sequence where the previous mutex is unlocked, the mechanism is operable to lock the previous mutex on behalf of the requesting thread and then to unlock the previous mutex on behalf of the requesting thread. The  
25 resource access control mechanism unlocks the mutex allocated to the requesting thread in response to the requesting thread completing access to the resource. By ensuring that only one thread is waiting on the release of any one mutex, problems with ordering of the resource  
30 access is avoided.